

REMARKS

Applicants respectfully request further examination and reconsideration in view of the above amendments and arguments set forth fully below. Claims 19-27, 29, 31, 48, 50-54, 56-63, 65, 66, 68 and 69 were previously pending in the instant application. Within the Office Action, Claims 19-27, 29, 31, 48, 50-54, 56-63, 65, 66, 68 and 69 have been rejected. By way of the above amendments, Claims 19, 29, 48, 56, 68 and 69 have been amended and Claims 31 and 54 have been canceled. Accordingly, Claims 19-27, 29, 48, 50-53, 56-63, 65, 66, 68 and 69 are now pending in this application.

Objection to Drawings:

The drawings have been objected to under 37 C.F.R. 183(a) for failing to show every feature of the claimed invention. Specifically, it is stated within the Office Action that Figures 5b, 5c and 5d show beam-blocking features but do not show side-firing optical fibers and that Figures 6a and 6b show shroud structures but do not show beam-blocking structures or slidable optical fibers.

Applicant contends that Figures 5b and 5c both clearly show side-firing optical fibers with extended side-firing portions 513 and 523 and beam-blocking features 515 and 525. With respect to Figures 6a and 6b, the Specification clearly states that an optical fiber can be slidably positioned within a shroud structure and that the approach angle of the optical fiber is adjustable. Specifically, it is stated that:

Figures 6a-b illustrate an endo-probe 600 in accordance with an alternative embodiment of the instant invention. The endo-probe 600 has an adjustable optical fiber 602 within a shroud structure 601. The adjustment feature of the endo-probe 600 further facilitates the ability to access a variety of approach angles during laser treatment of vascular biological tissues. In accordance with this embodiment, the optical fiber 602 is coupled to an adjustor 613 which allows the optical fiber 602 to be extended from and retracted within the shroud structure 601 along the length L_1 of the shroud structure 601. The endo-probe 600 can also be configured with a finger adjustment which allows the firing end 603 of the optical fiber 602 to be adjusted such that laser radiation 604 can be emitted from the endo-probe 600 through a range of angles A_1 , relative to the length L_1 of the shroud structure 601. The shroud structure 601 can be flexible or bendable, as previously explained, to further enhance the ability of the endo-probe 600 to be manipulated within and/or through a cavity within the body. [Present Specification, page 24, lines 2-13]

To add further clarification within the Specification, the description of Figures 5b and 5c has been amend to recite “side-firing optical fibers,” as shown, instead of “optical fibers.” This

amendment is clearly supported in Figures 5b and 5c as originally filed. Accordingly, no new matter has been added by the above amendments.

Rejections Under 35 U.S.C. § 112, first paragraph

Within the Office Action, Claims 19-27, 29, 31, 48, 50-54, 56-63, 65, 66, 68 and 69 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. It is stated within the Office Action that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, it is stated within the Office Action that the Specification fails to provide support for the combination of a side-firing optical fiber and a beam-blocking feature. Applicants, respectfully disagree with the rejection of Claims 19-27, 29, 31, 48, 50-54, 56-63, 65, 66, 68 and 69 under 35 U.S.C. § 112, first paragraph, for the following reasons. The Specification clearly describes the use of a side-firing optical fiber as an embodiment of the invention. Specifically, it is stated within the Specification that “the delivery optical fiber is a side-firing optical fiber and/or the endo-probe housing is configured with a shielding feature to control, block or filter radiation emitted in unwanted directions from the delivery fiber.” [Present Specification, page 8, lines 8-10] While, the term side-firing optical fiber was not used exclusively throughout the detailed description, Figures 5b and 5c clearly show the side-firing optical fibers in combination with the beam-blocking features.

To add further clarification in the Specification, the descriptions of Figures 5b and 5c have been amended to specifically recite side-firing optical fibers and Claims 31 and 54 have been canceled. Accordingly, Applicants respectfully request that the rejection of the remaining Claims 19-27, 29, 48, 50-53, 56-63, 65, 66, 68 and 69 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Rejections Under 35 U.S.C. § 112, second paragraph

Within the Office Action, Claims 19-27, 29, 31, 68 and 69 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

It is stated within the Office Action that it is not clear why a beam-blocking feature would be used in combination with a side-firing optical fiber, since laser radiation would not be emitted in a forward direction from the side-firing optical fiber. Applicants respectfully disagree with the rejection of Claims 19-27, 29, 31, 68 and 69 under 35 U.S.C. §112, second paragraph for the following reasons.

Laser radiation, while primarily emitted through the firing portion of an optical fiber, can to a lesser extent be emitted through walls and other structures of the optical fiber. Retinal tissues and the optic nerve are sensitive to laser exposure and can be irreparably damaged if inadvertently exposed to laser radiation. Therefore, it is preferable that laser radiation be precisely controlled during vitreoretinal laser surgery. To address these problems, the present invention is directed to laser systems that include endo-probes that allow surgeons to control the approach angle of firing portions of optical fibers during vitreoretinal laser surgery while also preventing “unwanted” or “uncontrolled” laser radiation from exposing healthy ophthalmic tissues during vitreoretinal laser surgery. Accordingly, the endo-probes of the present invention preferably include a shroud or housing structures and beam-blocking features, even when the optical fiber being used is a side-firing optical fiber.

Claim 31 has been canceled. For all of the reasons stated above, Applicants respectfully request that the rejection of the remaining Claims 19-27, 29, 68 and 69, under 35 U.S.C. §112, second paragraph, be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Within the Office Action, Claims 19-27, 29, 31 and 68 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,129,895 to Vassiliadis (hereafter “Vassiliadis”) in view of U.S. Patent No. 5,738,677 to Colvard et al. (hereafter “Colvard et al.”) and U.S. Patent No. 4,782,819 to Adair (hereafter “Adair”).

Claim 31 has been canceled by the above amendment. The Applicants respectfully disagree that Vassiliadis, Colvard et al., Adair or their combination teaches or suggests the invention as recited in Claims 19-27, 29 and 68 for all of the reasons stated in the previous communication. However, in order to further advance the prosecution of the present application, the independent Claims 19 and 68 have both been further amended to recite side-firing optical fiber structures with side-firing portions that extend outward from body portions of the side-firing optical fiber structures. This feature is clearly shown in Figures 5b and 5c of the Application as originally filed.

Neither Vassiliadis, Colvard et al., Adair nor their combination teaches or suggests a laser system or an endo-probe that includes a housing portion that surrounds a section of a side-firing delivery optical fiber and a beam-blocking portion that blocks forward propagation of the laser, wherein the side-firing delivery optical fiber includes a firing portion that extends outward, such as currently recited in each of the independent Claims 19 and 68. For at least these reasons, the independent Claims 19 and 68 are both allowable over the teachings of Vassiliadis, Colvard et al., Adair and their combination.

Claim 31 has been canceled by the above amendment. Claims 20-27 and 29 are all dependent on the independent Claim 19. As described above, the independent Claim 19 is allowable over Vassiliadis, Colvard et al., Adair and their combination. Accordingly, Claims 20-27 and 29 are all also allowable as being dependent on an allowable base claim.


The independent Claim 48 has been amended to overcome the rejection under 35 U.S.C. §112, first paragraph. Specifically, the independent Claim 48 now recites a laser system that includes means to generate bursts of laser light comprising laser pulses, means to focus the laser light into a trunk optical fiber, a flexible endo-probe coupled to the trunk optical fiber, the endo-probe comprising a delivery optical fiber with an input end for receiving laser radiation from the trunk optical fiber and a firing end, the flexible endo-probe further comprising a shroud feature that surrounds a portion of the delivery optical fiber and means to adjust an approach of the delivery optical fiber to the target area of vascular tissue during use, wherein the means to adjust the approach of the delivery optical fiber comprises a mechanism to slidably extend the delivery optical fiber from the endo-probe. Applicants contend that the features of a flexible endo-probe with a shroud feature that surrounds a portion of the delivery optical fiber and means to adjust an approach of the delivery optical fiber, wherein the means to adjust the approach of the delivery optical fiber comprises a mechanism to slidably extend the delivery optical fiber from the endo-probe, are neither taught nor suggested in the prior art made of record. Accordingly, the independent Claim 48 is now in condition for allowance.

Claim 54 has been canceled by the above amendment. Claims 50-53 and 56-63, 65 and 66 are all dependent on the independent Claim 48. As described above, the independent Claim 48 is now in condition for allowance. Accordingly, Claims 50-53 and 56-63, 65 and 66 are all also allowable as being dependent on an allowable base claim.

For the reasons given above, the Applicants respectfully submit that Claims 19-27, 29, 48, 50-53, 56-63, 65, 66, 68 and 69 are now all in condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, he is encouraged to call the undersigned at (408) 530-9700 to discuss them so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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Dated: November 7, 2006

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CERTIFICATE OF MAILING (37 CFR § 1.8(a))
I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

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